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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,068	12/19/2000	Manojkumar Saranathan	GEMS8081.037	9494

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EXAMINER	
ROBINSON, DANIEL LEON	
ART UNIT	PAPER NUMBER
3742	

DATE MAILED: 11/05/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/681,068	SARANATHAN ET AL.	
	Examiner	Art Unit	
	Daniel I. Robinson	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *10-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-9* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

Election/Restrictions

Applicant's election with traverse of Group I in Paper No. 4 is acknowledged. The traversal is on the ground(s) that the examiner did not provide an example of a "materially different product" as a "viable alternative" to perform a process. This is not found persuasive, the applicant has submitted four groups of claims two method groups and two product/apparatus groups. The restriction between the method and product claims is valid since the criteria for such a restriction is that the process can be practiced with alternative products, that is clearly the case since applicant has provided two alternatives ie. one a product that acquires data over one R-R interval and reconstructs an image based on the single data set; and another a product that acquires data over at least two R-R intervals and reconstructs an image based on the combined data from two R-R intervals. The process can indeed be practiced with either product as required by MPEP 806.05(h). If either product is not capable of performing either process that is further evidence of a need for restriction. With regard to the combination/subcombination restriction the subcombination clearly has particulars not in the combination and has separate utility as per paper number 3. The restriction with regard to the unrelated inventions is valid since the two methods are different ie. they have separate modes of operation and functions since one method measures cardiac rate and acquires n sets of MR data during n R-R intervals but does not create cardiac stress while the other creates cardiac stress and acquires only one set of non-gated MR data during only one R-R interval. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foo(U.S.Pat.6,078,175) in view of Foo(U.S.Pat.5,251,628) and Wang(U.S.Pat.6,198,959). Foo'175 discloses an acquisition of segmented cardiac MRI perfusion images that shows many of the features of the claimed invention but does not explicitly show free breathing or the combining of n data sets. Foo'628 discloses a variable ECG delay scan that shows combing n data sets acquired seqencially and a GRASS fast pulse sequence. Wang discloses a coronary magnetic resonance that explicitly shows free breathing with an MR imaging system. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to combine n data sets as taught by Foo'628 because the combination is required for a complete image and the GRASS fast pulse sequence can be accomplished within one cardiac cycle. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a free breathing method as taught by Wang because the free breathing method reduces motion artifacts in the image.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Foo refernece as applied to claims 1-3, 5, and 7 above, and further in view of Pele et al.(U.S.Pat.5,697,370). The modified Foo reference does not show using fluoroscopy imaging. Pele discloses a method of increasing temporal resolution of MR fluoroscopy that shows using fluoroscopy imaging. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use fluoroscopy imaging as taught by Pele because fluoroscopy imaging does not provides better imaging for time varying processes that are not periodic.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Foo reference as applied to claims 1-3, 5, and 7 above, and further in view of McVeighet al.(U.S.Pat.6,171,241). The modified Foo reference does not show increasing cardiac stress with a pharmaceutical. McVeigh discloses a method for measuring myocardial motion that shows using dobutamine to increase stress. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use dobutamine as taught by McVeigh because tagging data can be obtained within 3-4 minutes and the infusion rate of dobutamine is related to the stress level of the patient.

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Foo'307 and Kreger are cited to show structure similar to the claimed invention..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel l. Robinson whose telephone number is 703 306-9043. The examiner can normally be reached on M-F 5:30am-2:30pm.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0861.

dlr

DANIEL ROBINSON
PATENT EXAMINER